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WHAT IS CLAIMED IS:

1. A sensing circuit, comprising:
 - a transformer operatively coupled in parallel to a primary source; said transformer having a primary winding and a secondary winding;
 - a source for providing a drive signal to the primary winding of the transformer;
 - a device operatively coupled to the primary winding of the transformer for measuring current flow through the transformer;
 - a plurality of conducting members connected to the secondary winding of the transformer; and
 - a test point coupled to the primary winding of the transformer;
 - wherein each of the plurality of conducting members respectively communicate with a plurality of corresponding conductive members of a switch end cap.
2. The sensing circuit of claim 1, wherein the device is a resistor.
3. The sensing circuit of claim 1, wherein the sensing circuit detects switch functions, and a presence and type of switch end cap.
4. The sensing circuit of claim 1, wherein the source generates one of square waves and triangle pulse waves.

5. The sensing circuit of claim 1, wherein the transformer provides electrical isolation to ensure patient safety.

6. The sensing circuit of claim 1, wherein a pulse magnitude at the test point is proportional to an electrical conductivity across the plurality of conductive members.

7. The sensing circuit of claim 6, wherein the pulse is bi-polar and has a positive amplitude which is proportional to the electrical conductivity in one direction of the secondary winding and a negative amplitude which is proportional to the electrical conductivity in another direction of the secondary winding.

8. The sensing circuit of claim 1, wherein a signal at the test point provides conduction in each direction across the plurality of conductive members.

9. A sensing circuit for a switch end cap of a hand piece, comprising:

a plurality of switches connected in parallel;

a plurality of diodes respectively connected in series to each of the plurality of switches;

wherein the diodes are connected to each other in reverse polarities, and the circuit detects a presence of excessive debris associated with the handpiece.

10. The sensing circuit of claim 9, further comprising:

a plurality of conducting members connected to the plurality of diodes and the plurality of switches;

wherein each of the plurality of conducting members respectively communicate with a plurality of corresponding conductive members of the switch end cap.

11. The sensing circuit of claim 9, wherein two circuits are connected in parallel such that a status of multiple buttons on the handpiece is obtained.

12. The sensing circuit of claim 11, wherein the status of four buttons is obtained.

13. The sensing circuit of claim 12, wherein two sensing circuits are connected in parallel, and two conductive members are connected in parallel.

14. The sensing circuit of claim 10, further comprising:

a resistor connected in parallel with the plurality of conducting members.

15. The sensing circuit of claim 10, further comprising:

a resistor; and

a device connected in series with the resistor.

16. The sensing circuit of claim 15, wherein the resistor and device are connected in parallel with the plurality of conducting members.

17. The sensing circuit of claim 16, wherein the device is one of a capacitor and an inductor.

18. The sensing circuit of claim 10, further comprising:

a device connected in series with a diode from the plurality of diodes;

wherein a resistance of debris is determined in a single direction of current.

19. The sensing circuit of claim 18, wherein the device is one of a resistor and zener diode.

20. The sensing circuit of claim 10, further comprising:

a transorb connected in parallel with the plurality of conducting members.

21. The sensing circuit of claim 20, wherein the transorb comprises zener diodes connected in a back-to-back configuration.

22. The sensing circuit of claim 10, further comprising:

a sensor in close proximity to the plurality of conducting members.

23. The sensing circuit of claim 22, wherein the sensor comprises a reactive material.
24. The sensing circuit of claim 23, wherein the reactive material has a low conductivity when dry and facilitates conduction when one of wet and exposed to a chemical reaction.